

Social Influence and the Consumer Bankruptcy Decision

by

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Abstract

I examine the influence of neighbors on the consumer bankruptcy decision using administrative bankruptcy records linked to the 2000 Decennial Census. Two empirical strategies remove unobserved common factors that affect identification. The first strategy uses small geographical areas to isolate neighborhood effects, and the second strategy identifies the effect using past bankruptcy filers who moved states. The findings from both strategies reinforce each other and confirm the role of social influence on the bankruptcy decision. Having a past bankruptcy filer move into the block from a different state increases the likelihood of filing by 10 percent.

Keyword: Personal bankruptcy; program participation; social influence

JEL Classification: D12; K35

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I. Introduction

Not all eligible individuals choose to receive social insurance benefits. Two common reasons for incomplete take-up are stigma and incomplete information. Stigma refers to status loss, discrimination, and stereotyping based on an observable characteristic such as program participation (Link and Phelan, 2001). Incomplete information may result from complications related to eligibility, the expected benefits, and the logistics of applying (Daponte, Sanders, and Taylor, 1999).

Interactions with neighbors influence stigma and information. For example, living near others who speak the same foreign language increases welfare take-up among high take-up language groups (Bertrand, Luttmer, and Mullainathan, 2000). Financial information is also shared among family members and neighbors. The likelihood of stock market participation increases if an extended family member also invests in stocks (Li, 2014), and individuals living in areas with higher social capital are more likely to invest in the stock market (Bricker and Li, 2017), suggesting that increased interaction with neighbors influences stock market participation.

I study how living near past bankruptcy filers affects the consumer bankruptcy decision, using administrative bankruptcy records linked to the 2000 Decennial Census. Two identification strategies remove the potential confounding effects of unobserved local characteristics and the reflection problem (Manski, 1993). Both strategies follow Bayer, Ross, and Topa (2008), Grinblatt, Keloharju, and Ikaheimo (2008), and Bernasco, de Graaf, Rouwendal, and Steenbeck (2017) in using small geographical areas to isolate neighborhood effects. Specifically, I use U.S. census blocks, which contain approximately 27 households. The first strategy identifies the effect by differencing the

bankruptcy filing rate of far neighbors from the bankruptcy filing rate of close neighbors. The second strategy proposes a new methodology not used elsewhere, identifying the model using past bankruptcy filers who moved states. Both identification strategies indicate that living near a past bankruptcy filer increases the likelihood of bankruptcy. A past bankruptcy filer moving into a block from a different state increases the likelihood of filing by 10 percent. The influence of neighbors is 33 percent stronger in rural areas, suggesting that the stronger ties in rural areas increase the influence of neighbors on bankruptcy.

Conceptually, interactions with neighbors can affect the likelihood of bankruptcy through the transfer of information or a decrease in stigma. Information can increase the likelihood of bankruptcy by sharing the name of the lawyer used, the property protected in bankruptcy, and the types of debt forgiven. The benefits of bankruptcy are potentially large. The average bankruptcy filer had approximately \$48,000 in forgivable debt in 2015.¹ Unlike other social insurance programs, there are also serious long-term costs to filing for personal bankruptcy, including exclusion from the credit market and higher interest rates among those receiving credit (Fisher and Lyons, 2010; Han and Li, 2011; and, Dobbie, Goldsmith-Pinkham, Mahoney, and Song, 2016).

Stigma associated with bankruptcy may dampen the information channel. But stigma can be reduced by knowing someone who has filed for bankruptcy, and stigma is context dependent (Gerstel, 1987). A bankruptcy resulting from medical debts or structural job loss may be viewed differently than a bankruptcy resulting from excessive

¹ In 2015, dischargeable debt was \$38 billion among the 794,976 consumer filers.

<http://www.uscourts.gov/statistics-reports/bapcpa-report-2015>

credit card use.² I do not attempt to separate stigma from information. Instead, I argue that the information channel can also affect stigma. Learning that a neighbor about the benefits of bankruptcy may also decrease stigma.

Others have estimated the impact of stigma and information on bankruptcy. Fay, Hurst, and White (2002) and Gross and Souleles (2002) identify the effect using lagged bankruptcy rates at the state or bankruptcy district level and find that an increase in the lagged rate increases the likelihood of filing. Lagged filing rates may be an insufficient control for endogeneity because bankruptcy is not like unemployment insurance where take-up occurs soon after job loss. Bankruptcy does not occur immediately after some negative shock, but instead may take years suggesting that lagged filing rates do not remove all endogeneity concerns.

² Context-dependent stigma is analogous to the distinction between the “deserving poor” and “non-deserving poor.” Moffitt (2015) argues that the current social safety net in the United States separates out the deserving poor from the non-deserving poor. The deserving poor are those who work, are married or widowed, and who have children. Analogously, the deserving bankrupt may be those that filed for bankruptcy because of medical debt or job loss, and they may feel less stigmatized and be more willing to share information. The separation of the deserving bankrupt and the non-deserving bankrupt is, at a minimum, implicit in the 2005 Bankruptcy Abuse and Consumer Protection Act (BAPCPA). BAPCPA implemented a means-test to force the underserving bankrupt – those seen as abusing bankruptcy protection – to the less generous Chapter 13. Unfortunately, I am unable to test the idea of the deserving bankrupt with the current data because I do not know the cause of bankruptcy.

Dick, Lehnert, and Topa (2008) compare changes in bankruptcy filing rates between zip codes close to a neighboring state and zip codes far from the same neighboring state. The neighboring state changed its state bankruptcy laws to become more generous, which was expected to lead to an increase in bankruptcy filings in that state. Dick et al. (2008) hypothesize that those living in close zip codes, but in a different state, were exposed to more information about personal bankruptcy than those living in far zip codes. They find mixed evidence for their hypothesis.

Using Canadian bankruptcy data, Scholnick (2013) relies on differences between close and far neighbors and finds evidence that information increases the likelihood of bankruptcy. I also use the same identification strategy as Scholnick (2013) but using administrative bankruptcy data from the United States. I also present a second identification strategy in order to provide improved confidence in the results. Lastly, I improve upon the existing literature by using administrative bankruptcy data for the United States linked to the 2000 Decennial Census.

II. Bankruptcy in the United States

Personal bankruptcy is divided into two chapters, 7 and 13. Chapter 7 bankruptcy forgives most unsecured debts with no need to repay creditors. Chapter 7 discharges secured debts only if the filer forfeits the collateral. The filer forfeits assets exceeding the exemption level, with the exemptions varying by state. Chapter 13 is used almost exclusively by those who would lose assets under chapter 7 (Fisher, 2017). Chapter 13 filers do not turn over assets to the bankruptcy court but instead propose a multi-year repayment plan for a portion of the outstanding debts. If the repayment plan is

successfully completed, the filer receives a discharge of unsecured debts, similar to what would have been discharged under chapter 7.

There have been two major changes in bankruptcy law during the last forty years. In 1978, bankruptcy became more generous by increasing the amount of property filers could retain in bankruptcy, which led to higher filing rates (Boyes and Faith, 1986). The Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) passed in April 2005 and became law in October 2005. BAPCPA increased the dollar cost of filing;³ increased the non-monetary costs of filing by increasing the amount of information that needs to be provided and by requiring credit counseling; and, means-tested chapter 7.

As preliminary evidence that information affects bankruptcy, an extra 500,000 people filed for chapter 7 between April and October 2005 compared to the same months in 2004. Thus, information about how bankruptcy was becoming less generous led to a dramatic increase in filings between the time the bill passed and when it took effect.

III. Data

Information on bankruptcy filings comes from administrative court records available through the Public Access to Court Electronic Records system. The bankruptcy records include name, address, last four digits of the social security number, date of filing, and other information. Because record access was not granted in all bankruptcy districts, the results exclude Connecticut, Florida, Georgia, New Hampshire, New Jersey, Virginia, and Washington.

³ The dollar cost of filing for bankruptcy is a significant impediment to filing (Gross, Notowidigdo, and Wang, 2014).

The PACER data were provided to the Census Bureau, which added a unique person identifier called the Protected Identification Key (PIK). The PIK allows the linkage, at the person level, of the bankruptcy records with the 2000 Decennial Census of Population & Housing Long Form. The 2000 Decennial captures the place of residence as of April 1, 2000. It also provides basic demographic information, income in 1999, and detailed geographic information.

The identification strategies rely on detailed geography, and I use census blocks and tracts. Blocks represent the smallest geographic unit published by Census and include approximately 70 people. Census blocks are “bounded by visible features, such as streets, roads, streams, and railroad tracks, and by nonvisible boundaries, such as selected property lines and city, township, school district, and county limits and short line-of-sight extensions of streets and roads.”⁴ Blocks aggregate to tracts, which contain around 4,000 people. Given that average household size was 2.6 in 2000, blocks contain about 27 households, and tracts contain approximately 1,500 households.

IV. Identification Strategies

I employ the same basic model for the two identification strategies:

$$\Pr(\text{Bankruptcy}_{ij}) = f(\text{Neighbors}_j) + X_i\beta + \alpha_k + \varepsilon_{ij} \quad (1)$$

The dependent variable indicates whether someone in the household i , living in block j , filed for bankruptcy in 2000 or 2001. I restrict the sample to filers from 2000-2001 because I want to ensure that the households are neighbors around the time of the bankruptcy filing. I restrict the estimation sample to households that did not file for

⁴ https://www.census.gov/geo/reference/gtc/gtc_block.html. Accessed on April 24, 2017.

bankruptcy before 2000. Past bankruptcy filers already know the information about bankruptcy, and I want to identify the role of new information on bankruptcy.

The vector X_i includes a quadratic in household's 1999 income, a quadratic in age, along with dummy variables for education, race, marital status, and whether the household has children. I also include geographic fixed effects, α_k , showing separate results using state fixed effects, county fixed effects, and tract fixed effects. These fixed effects can also control for other local unobserved effects not already controlled for by the identification strategy.

The key independent variable, $Neighbors_j$, identifies the influence of neighbors that filed for bankruptcy in block j . I turn to describing the two definitions of $Neighbors$.

A. Differential Filing Rate

The first identification strategy follows Grinblatt, Keloharju, and Ikaheimo (2008) and Scholnick (2013). The basic idea is to difference out any common local unobserved factors. The variable $Neighbors_j$ subtracts the filing rate of far neighbors from the filing rate of close neighbors, which I refer to as the differential filing rate. I calculate the percent of residents living in census block j that filed for bankruptcy between 1990 and 1999 and call this the filing rate of close neighbors. The filing rate of far neighbors is the percent of residents in the household's tract, excluding those in the household's block, that filed for bankruptcy between 1990 and 1999. I use filings from 1990-1999 assuming that the information about bankruptcy persists and is not restricted to those who filed for bankruptcy recently.

The identifying assumption is that the unobserved factors that led those in the household's block to file equally affect those in the household's tract. Differencing the tract rate from the block rate removes these unobserved factors. The residual captures only the excess influence of the closest neighbors. I also present results using the block filing rate without differencing out the tract filing rate. The block rate fails to remove the unobserved local factors, representing an upper bound on the true effect.

B. Filer Moved In

The second identification strategy is novel to this study. I use current neighbors that filed, but the neighbor filed while living in a different state. Using those that filed in a different state removes the concern of a common, local unobserved factor causing both bankruptcy filings because the filings occurred in different localities.

The variable $Neighbors_j$ equals one if at least one household in the household's census block j filed for bankruptcy between 1990 and 1999 while living in a different state. Because blocks are contained within a state, the past bankruptcy filer was not a neighbor when filing. Mechanically, I first identify anyone who filed for bankruptcy between 1990 and 1999. I then limit to those who filed for bankruptcy in one state, as identified in the bankruptcy data, and lived in a different state in the 2000 Decennial. With this sample of past bankruptcy filers that moved states, I identify all census blocks that had at least one 1990-1999 bankruptcy filer move into it from a different state.

V. Results

The primary results below use a linear probability model to estimate all models. I also present probit results with state fixed effects.

A. Differential Filing Rate

I begin with the results of the first identification strategy, which again uses the differential bankruptcy filing rate. Table 1 shows results using different geographic fixed effects: state, county, and tract. The findings are consistent across the first three columns of Table 1, showing that an increase in the differential filing rate increases the likelihood of bankruptcy. Using the results from column (3), a one standard deviation increase in the differential filing rate increases the likelihood of filing by 0.5 percent. The probit results are consistent with the OLS results (Table 1, columns 7 and 8). An increase in the differential filing rate increases the likelihood of bankruptcy, and the biased coefficient in column 8 is ten times higher.

Columns four through six in Table 1 display the upper bound. The block filing rate enters directly rather than differencing out the tract filing rate. The coefficient on the block filing rate fails to remove the effect of unobserved local economic factors, except the part captured by the geographic fixed effect. When using state fixed effects, the upper bound in column 4 (0.0379) is over eleven times higher than the unbiased coefficient (0.0032). The difference between the unbiased and biased coefficient shrinks when using county fixed effects, and the difference disappears with tract fixed effects. The tract fixed effect in column 6 accounts for these unobserved local factors.

I provide two informal tests of the identification strategy. There may still concern that there are unobserved factors not controlled for in Table 1. The blocks and tracts are comparable on the observables (Table 2). The close neighbors and far neighbors are identical on the observables except the variable of interest, the filing rate. Because the close and far neighbors are identical on the observables, it is safer to assume that they are also similar on the unobservables (Grinnblatt et al., 2008). An additional test is whether the observables are correlated with the differential filing rate. I find little correlation between the observables and the differential filing rate (Table 3), providing additional confidence in the identification strategy.

B. Filer Moved In

Because few identification strategies are perfect, I present a second model. Here I use a binary indicator equaling one if the household lives in a block with a past bankruptcy filer living in it. The past bankruptcy filer must have filed for bankruptcy while living in a different state.

First, I compare past bankruptcy filers that move states to past bankruptcy filers that do not move states (Table 4). Those filers that move states are much less likely to move to an urban area, with only 65 percent of those that moved states living in an urban area after the move. Of those that do not move states, 78 percent live in urban areas. On the other observables, past filers that move states are similar to past bankruptcy filers that do not move states.

Even if past bankruptcy filers that move states and those that do not moves states are similar on the observables, there may be a concern that past bankruptcy filers that

move states choose blocks that already have a higher likelihood of bankruptcy. To be more precise, there may be a concern that past bankruptcy filers may move to neighborhoods where their bankruptcy filing is deemed more acceptable. The small size of census blocks, approximately 27 households, addresses the concern about non-random sorting into neighborhoods. Bayer, Ross, and Topa (2008) demonstrate that housing markets are relatively thin at the block level, indicating that using block is a low enough level of geography to mitigate any concern about non-random sorting into blocks.

The first three columns of Table 5 present the results of the second method to test the effect of information on the decision to file for bankruptcy, again with separate results using state fixed effects, county fixed effects, and tract fixed effects. The results consistently show that living in a census block that had a past filer move in increases the likelihood of filing. The tract fixed effect results indicate that having a past bankruptcy filer move into your block increases the likelihood of filing by 10 percent. The results are consistent when using a probit (columns 7 and 8 of Table 5).

As was done for the differential filing rate results, I show the biased coefficient for the mover results. The analogue is whether the household lives in a block with any past filer living in it. Columns 4-6 of Table 5 show the results on having any past filer living in the household's block. Living in the same block as any past bankruptcy filer increases the likelihood of bankruptcy by 17 percent (Column 6, Table 5), which represents the upper bound on the effect of neighbors on bankruptcy.

C. Differences Between Urban and Rural Areas

The last set of results use the same identification strategies but look for differential responses by whether the household lives in an urban or a rural area. Social interactions may differ between urban and rural areas, which may lead to a stronger effect of neighbors in one community type. Rural areas have social ties that have a longer history and are more likely to involve relatives (Beggs, Haines, and Hurlbert, 1996). Past bankruptcy filers may be more willing to share information with those they have known longer. Alternatively, urban areas provide weak ties between non-relatives, which provides a greater quantity and a greater heterogeneity of information (Granovetter, 1983). If urban areas have more weak ties and these weak ties lead to an increased likelihood of learning about bankruptcy, then urban areas may exert a stronger social influence.

I present results separately for urban and rural areas using both identification strategies. For both identification strategies, the effect of neighbors is stronger in rural areas (Table 6). Having a past bankruptcy filer move into a rural block increases the likelihood of filing by 12.4 percent, compared to 9.3 percent in an urban block. Thus, it may be that the strong ties in rural areas outweigh the more diverse sources of information in an urban setting.

V. Conclusion

I find that neighbors affect the likelihood of consumer bankruptcy. The two identification strategies improve upon existing research by utilizing independent sources of plausibly exogenous variation. The first identification strategy uses the excess

influence of households living in the same block. The second strategy uses past bankruptcy filers that moved to the block from a different state after filing for bankruptcy. Both identification strategies confirm that information and stigma play an important role in bankruptcy. I also improve on existing research by using small geographic areas and by using administrative bankruptcy records.

These results can help explain the steady increase in the bankruptcy filing rate since 1984. The change in the bankruptcy law in 1978 made bankruptcy more generous. As individuals filed under the new law, they learned that bankruptcy was more generous than they expected. The information on the generosity of bankruptcy slowly passed to neighbors. As the neighbors learned of the more generous law, their likelihood of filing increased. The spread of information created a snowball effect as more and more people became exposed to neighbors who had filed under the more generous bankruptcy code. The steady increase in filings only stopped with the 2005 change to bankruptcy law. The spread of information once again needs to start again, but this time with a less generous and more burdensome law.

One limitation of the findings is that I could not separate out the effect of stigma from information. Instead I argue that stigma and information are complementary. Learning from a neighbor that bankruptcy is beneficial may decrease stigma. Future research is needed to separately identify a stigma channel from an information channel.

Unfortunately, these results do not resolve the debate between the fundamental cause of personal bankruptcy – whether the bankruptcy decision is purely strategic or the result of some negative shock. Learning from your neighbor that bankruptcy is more generous than you thought or has less stigma could lead to moral hazard. People may

learn about the generosity of bankruptcy and increase dischargeable debt because the perceived option value of bankruptcy increased. Future research could examine whether living near a past bankruptcy filer increases the dischargeable debt of close neighbors.

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Table 1: Effect of Neighbors on Bankruptcy using Differential Filing Rates

	Linear Probability Model						Probit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Differential Filing Rate	0.0032 (0.0013)	0.0074 (0.0011)	0.0131 (0.0009)				0.0758 (0.0200)	
Own Block Filing Rate				0.0379 (0.0030)	0.0267 (0.0015)	0.0131 (0.0009)		0.7898 (0.0145)
State FE	Yes			Yes			Yes	Yes
County FE		Yes			Yes			
Tract FE			Yes			Yes		
Sample size: 12,950,000								

Notes: Each regression includes controls for a quadratic in income, a quadratic in age of the household head, education, race, marital status, and children. Dependent variable equals one if the household filed for bankruptcy in 2000 or 2001. *Differential Filing Rate* equals the bankruptcy filing rate from 1990-1999 for those living in the census block minus the bankruptcy filing rate in the tract. *Own Block Filing Rate* is the bankruptcy filing rate from 1990-1999 for those living in the same census block. The probit results show coefficients and not marginal effects.

Source: PACER and 2000 Decennial Long Form

Table 2: Comparison of Close and Far Neighbors

	Close Neighbors (block)	Far Neighbors (tract)
Bankruptcy Filing Rate	0.0134	0.0184
Income (Mean)	55,060	55,050
Age (Mean)	48.5	48.4
High School Dropout (%)	0.2114	0.2114
High School (%)	0.2882	0.2886
Some College (%)	0.2712	0.2714
College (%)	0.2292	0.2286
White (%)	0.7884	0.7881
Black (%)	0.0865	0.0868
Hispanic (%)	0.0789	0.0789
Other race (%)	0.0462	0.0462
Urban (%)	0.6661	0.6662
Married (%)	0.5476	0.5478
Divorced-Widowed-Separated (%)	0.2697	0.2697
Single (%)	0.1828	0.1825
Children in household (%)	0.3520	0.3528

Notes: Filing rate is the percent of households that filed for bankruptcy in 2000 or 2001. Close neighbors are those in the same census block. Far neighbors are those in the same census tract, excluding those in the same census block.

Source: PACER and 2000 Decennial Long Form

Table 3: Correlation of Differential Filing Rate and Observables

	<u>Differential Filing Rate</u>
Income	0.0007
Age	-0.0070
High School Dropout (%)	-0.0032
High School (%)	-0.0007
Some College (%)	0.0014
College (%)	0.0025
White (%)	0.0049
Black (%)	-0.0157
Hispanic (%)	0.0045
Other race (%)	0.0057
Urban (%)	-0.0087
Married (%)	-0.0008
Divorced-Widowed-Separated (%)	-0.0015
Single (%)	0.0027
Children (%)	0.0017

Note: Differential Filing Rate equals the bankruptcy filing rate from 1990-1999 for those living in the census block minus the bankruptcy filing rate in the tract.

Source: PACER and 2000 Decennial Long Form

Table 4: Bankruptcy filers that move states after filing are demographically similar to non-movers

	Don't move state after filing	Move state after filing
Income (mean)	51,980	52,190
Age (mean)	44.6	43.6
High School Dropout (%)	0.1779	0.2008
High School (%)	0.3538	0.3462
Some College (%)	0.3450	0.3276
College (%)	0.1233	0.1254
White (%)	0.6937	0.6742
Black (%)	0.1929	0.2022
Hispanic (%)	0.0391	0.0445
Other race (%)	0.0743	0.0791
Urban (%)	0.7820	0.6534
Married (%)	0.5621	0.5774
Divorced-Widowed-Separated (%)	0.2978	0.2821
Single (%)	0.1401	0.1405
n	240,000	14,000

Source: PACER and 2000 Decennial Long Form

Table 5: Effect of Past Bankruptcy Filer Moving into Neighborhood on Bankruptcy Filing Rate

	Linear Probability Model						Probit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Filer Moved In	0.0028 (0.0004)	0.0016 (0.0004)	0.0013 (0.0004)				0.0659 (0.0084)	
Filer Lives in Block				0.0057 (0.0001)	0.0039 (0.0002)	0.0022 (0.0002)		0.1389 (0.0031)
State FE	Yes			Yes			Yes	Yes
County FE		Yes			Yes			
Tract FE			Yes			Yes		
Sample size: 12,950,000								

Notes: Each regression includes controls for a quadratic in income, a quadratic in age of the household head, education, race, marital status, and children. Dependent variable equals one if the household filed for bankruptcy in 2000 or 2001. *Filer Moved In* equals one if the household lives in a block that had a past bankruptcy filer move into it from another state. *Filer Lives in Block* equals one if the household lives in a block that had any past bankruptcy filer living in it. The probit results show coefficients and not marginal effects.

Source: PACER and 2000 Decennial Long Form

Table 6: Differences in the Social Influence of Bankruptcy by Urban and Rural Status

	URBAN			RURAL		
	(1)	(2)	(3)	(4)	(5)	(6)
Differential Filing Rate	0.0033 (0.0014)	0.0064 (0.0012)	0.0117 (0.0010)	0.0072 (0.0018)	0.0129 (0.0016)	0.0147 (0.0016)
State FE	Yes			Yes		
County FE		Yes			Yes	
Tract FE			Yes			Yes
n (in millions)	8.62	8.62	8.62	4.32	4.32	4.32
	URBAN			RURAL		
	(7)	(8)	(9)	(10)	(11)	(12)
Filer Moved In	0.0020 (0.0004)	0.0015 (0.0005)	0.0012 (0.0005)	0.0038 (0.0007)	0.0021 (0.0007)	0.0016 (0.0007)
State FE	Yes			Yes		
County FE		Yes			Yes	
Tract FE			Yes			Yes
n (in millions)	8.62	8.62	8.62	4.32	4.32	4.32

Notes: Each regression includes controls for a quadratic in income, a quadratic in age, education, race, marital status, and children. Dependent variable equals one if the household filed for bankruptcy in 2000 or 2001. *Differential Filing Rate* equals the bankruptcy filing rate from 1990-1999 for those living in the census block minus the bankruptcy filing rate in the tract. *Filer Moved In* equals one if the household lives in a block that had a past bankruptcy filer move into it from another state.

Source: PACER and 2000 Decennial Long Form